



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appl. No.: 10/686,915
Applicant: Roger N. Chauza, et al.
Filed: October 16, 2003
TC/AU: 3747
Examiner: MCMAHON, Marguerite J.
Title: Mobile Engine Performance Demonstration Unit

Confirmation No.: 7480

Docket No.: CHAU-0101US
Cust. No.: 31,782

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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Roger N. Chauza
Name of Depositor

Signature: July 13, 2006

Dear Sir:

APPEAL BRIEF

This is an appeal of the Final Rejection of the Examiner dated January 13, 2006. A Notice of Appeal was filed April 13, 2006. This Appeal Brief is accompanied by the requisite \$250.00 fee set forth in 37 CFR 41.20(b)(2). A one-month extension fee of \$60 is also enclosed.

REAL PARTY IN INTEREST

The real party in interest of the appealed application is Roger N. Chauza and Brenda H. Borchelt, both individuals. Roger N. Chauza is also the attorney of record of the captioned patent application.

RELATED APPEALS

There are no related appeals or declared interferences involving the captioned application, to the knowledge of the undersigned.

STATUS OF CLAIMS

The status of the claims is therefore believed to be as follows:

Allowed Claims: None

Claims Objected to: 8 and 9

Claims Rejected: 1-6, 10, 11, 13-15, and 21 - 27

Withdrawn Claims: 7 and 12

Appellant hereby appeals the Examiner's Final Rejection of Claims 1-6, 10, 11, 13-15, and 21 - 27 over the prior art of record.

STATUS OF AMENDMENTS

No amendment or other paper, other than the Notice of Appeal, was filed in response to the Final Office Action mailed January 13, 2006.

SUMMARY OF THE INVENTION

The preferred embodiment of the invention is disclosed in terms of a mobile operational engine equipped to demonstrate the effectiveness of aftermarket apparatus operated under actual working conditions (page 6, paragraph 8). The engine is mounted to a trailer and adapted for towing by a vehicle to various sites for demonstrating the performance of the engine as a function of the aftermarket apparatus (page 6, paragraph 8). The engine is equipped with apparatus for switching the aftermarket apparatus in and out of operation while the engine is running to demonstrate the change in efficiency of the operation of the engine (page 10, paragraph 19 and page 14, paragraph 29). Further included are a number of gauges for demonstrating the operational parameters of the engine when the aftermarket apparatus is switched into operation and out of operation (page 7, paragraph 11). Various monitors are connected to the exhaust system to also demonstrate the change in emissions which corresponds to the use of the aftermarket apparatus (page 10, paragraph 20). A fuel flow gauge is coupled to the fuel line to monitor the fuel flow when the aftermarket apparatus is switched into and out of operation (page

9, paragraph 16). The engine can be equipped with a load that can be varied to vary the performance parameters of the engine (page 6, paragraph 10). A catalytic converter can be switched into and out of operation so that the engine emissions can be demonstrated to verify the effectiveness of the aftermarket apparatus (page 8, paragraph 14).

ISSUES

Claims 1-6, 13-15, and 21 - 27 are rejected under 35 U.S.C. §103 as being obvious over U.S. Pat. No. 4,932,628 by Pacheco in view of U.S. Pat. No. 5,637,226 by Adam et al. The issue is whether the combined teachings of these references disclose or suggest all of the limitations of the rejected claims such that a prima facie case of obviousness has been established.

GROUPING OF CLAIMS

While the same ground of rejection in the Final Office Action applies to all the rejected claims, each group of claims is independently patentable over the cited reference and will be argued separately.

- Group I:** Claims 1, 6, 13, 14, 26 and 27 comprise the first group. The patentability of Claims 13, 14, 26 and 27 depend on the patentability of independent Claim 1.
- Group II:** Claims 2, 4 and 5 comprise the second group. The patentability of claim 4 and 5 depends on the patentability of Claim 2.
- Group III:** Claim 3
- Group IV:** Claim 7
- Group V:** Claim 10
- Group VI:** Claim 11
- Group VII:** Claim 15
- Group VIII:** Claim 21
- Group IX:** Claim 22
- Group X:** Claim 23
- Group XI:** Claim 24
- Group XII:** Claim 25

ARGUMENT

I. ISSUE — OBVIOUSNESS OF CLAIMS 1-6, 13-15 and 21 - 27.

In the Final Office Action dated January 13, 2006, the Examiner rejected Claims 1-6, 13-15, and 21 - 27 under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 4,932,628 by Pacheco (“Pacheco” reference) in view of U.S. Pat. No. 5,637,226 by Adam et al. (“Adam” reference). A copy of these cited references is attached hereto in the Evidence Appendix.

Claims 10 and 11 are rejected by the Examiner, but there is no indication of the statutory basis for the rejection. The only indication is that the Examiner rejected such claims as being within the purview of one skilled in the art.

While claim 26 is indicated in the Final Office Action as being rejected under the above-identified patent references, the Examiner apparently does not rely on either of the references in the rejection of such claim.

In assessing obviousness or nonobviousness of the claimed invention, the claim as a whole, rather than the constituent limitations, must be found in the prior art. *In re Ochiai*, 71 F.3d 1565, 37 USPQ2d 1127 (Fed. Cir. 1995). The Examiner bears the initial burden of presenting a prima facie case of unpatentability of the claims in view of the prior art. *In re Oetiker*, 977 F.2d 1443, 24 USPQ 1443 (Fed. Cir. 1992). Moreover, obviousness is not established by simply finding the claim limitations in the various prior art references. There must also be shown that the prior art would have suggested to those of ordinary skill in the art the invention as a whole. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). The Federal Circuit has stated “[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.” *In re Fritch*, 972 F.2d 1260, 1266, n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), citing *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). As set forth below, it is shown that the cited references applied in the rejection of the claims neither disclose all of the limitations of such claims, nor make obvious the differences between the claimed invention and the cited prior art.

Claims 1, 6, 13, 14, 26 and 27

Claim 1 has been rejected as being made obvious by the teachings of the Pacheco reference in view of the Adam reference. For convenience, claim 1 is repeated below:

1. An engine performance demonstration unit, comprising:
 - a mobile carrier;
 - an engine mounted to said mobile carrier;
 - aftermarket apparatus for use with said engine to affect the operation of said engine; and
 - a switch mechanism for switching said aftermarket apparatus into operation and out of operation while said engine is running to thereby affect said engine accordingly.

The Rejection

The rejection of claim 1 is based on the Examiner's view that the Pacheco reference shows everything claimed, *except* the aftermarket apparatus for use with the engine to affect the operation of the engine, and the means for switching the aftermarket apparatus into operation and out of operation while the engine is running to thereby affect the engine.

As to the Adam reference, the Examiner contends that "Adam et al teach that it is old in the art to employ an aftermarket apparatus (i.e. magnetic fuel treatment device) for use with said engine to affect the operation of said engine comprising magnets 7 and 8; and means for switching said aftermarket apparatus into operation and out of operation to thereby affect said engine accordingly (see column 4, lines 6-25, which cite that both fuel efficiency and emissions are improved with the magnetic device, as opposed to without the magnetic device)." (Final Office Action, page 3).

In finding claim 1 obvious over the cited references, the Examiner concludes that it would have been obvious to one having ordinary skill in the art to modify the Pacheco reference by employing an aftermarket apparatus for use with the engine to affect the operation of the engine comprising magnets; and means for switching the aftermarket apparatus into operation and out of operation to thereby affect the engine accordingly.

In the "Response to Arguments" portion of the Final Office Action (page 5), the Examiner addresses where in the cited references the claimed "switch mechanism" is made obvious. Here, the Examiner states that the "Applicant argues that Adam et al does not show a switch mechanism." The Examiner continues with the teachings of the Adam reference by stating:

Applicant appears to be reading more into the meaning of the term “switch mechanism” than is actually there. A switch mechanism is a means of switching between two different states. In the context of the claims, it is a means of switching between a state in which the magnets are in contact with the fuel line and are affecting the combustion, and a state in which the magnets are not in contact with the fuel line, and therefore are not affecting the engine combustion. While it is true that Adam et al does not explain how the switch between these two states takes place, it is inherent that a switch takes place. Otherwise, Adam et al would not be able to provide the information about the various output characteristics of an IC engine burning rated fuel to those in an IC engine burning untreated fuel. Even if Adam et al relies upon two different engines, as Applicant suggests is possible, or if Adam et al requires that the fuel line be removed in order to switch from mode to another, as Applicant also suggests is possible, this would still read on the claims, with the caveat that the limitation “while the engine is still running” would not be necessarily be met. However, this limitation does not provide any benefit to the functioning of the device, and is therefore considered to be a matter of design choice, as explained in the above rejection.

In response to the second non-final Office Action dated July 28, 2005, Applicants made various observations concerning the Adam reference, including the following (pages 10-12):

The teachings of the cited Adams et al reference are directed to a helical coil as part of the fuel line, with magnets placed inside and outside the helical-shaped fuel line. The magnetic field of the magnets influences the molecules of fuel and apparently produces the desired increase in mileage and reduction in pollution. There is no hint in the Adams et al reference of how to integrate the helical fuel line into the original fuel line of the engine. The entire disclosure of the reference does not indicate that the section of helical coil is welded, bolted or otherwise integrated into the fuel line of the engine. The figures of the helical section of fuel line show truncated ends, which might be adapted for welding onto severed ends of the original fuel line. Alternatively, the helical section shown might be a portion of the

entire fuel line, in which event the entire original fuel line would have to be removed and replaced by the fuel line which incorporates the helical section. There is no indication that the ends of the helical section would be formed with flanges or connections for insertion into a modified fuel line. In this latter event, which is not suggested, the original fuel line would have to be cut, a short length removed, and each end fabricated or otherwise modified to be equipped with a flange or connection for mating to the helical section. Of course, this is not suggested in the Adams et al reference.

In any event, it can be seen that the Adams et al reference is silent as to the details of the manner in which the helical coil is integrated into a fuel line. The Examiner is correct in noting that the Adams et al reference discloses the test results of an internal combustion engine with and without the use of the magnetic fluid treatment device. The Adams et al reference does allude to the test environment and/or equipment in the following text, at column 4, lines 6-10:

FIGS. 5-9 are graphs illustrating the results of tests performed to confirm the effect of the invention. The tests compared various output characteristics of an IC engine burning treated fuel to those of an IC engine burning untreated fuel.

The wording of this text of the reference seems to indicate that two internal combustion engines are being used, one with the helical coil and magnets and another engine without such equipment. This conclusion is reached because of the use of the phrase "... to those of an IC engine burning untreated fuel." (Underlining added). If the same engine were used in both tests, than the underlined word used to describe the engine(s) would have been replaced with the word "the" to indicate the same engine was being used.

Notwithstanding the foregoing, even if the same engine were being used for both tests, there is no indication whatsoever of using a switch mechanism for switching the helical coil / magnet arrangement into and out of operation while the engine was running. Rather, it is believed that the common practice would have been to use a straight fuel line without magnetic influence in one test, remove the fuel line and replace it with the helical coil equipped fuel line and proceed to conduct the other test. Alternatively, the straight fuel line would be severed and the helical coil section surrounded with magnets would be fastened in series with the ends of the severed fuel line. This latter maneuver would be very much like a mechanic placing an in-line fuel filter in a fuel line where none existed before.

In both of the above noted circumstances, the fuel line is temporarily disconnected, thus disrupting fuel flow to the engine. When disconnected, the fuel cannot be pumped to the engine to keep it running. Thus in both cases described above, the integration of the magnetic fuel treatment device cannot be placed into and out of operation while the engine is running. Secondly, it would be very dangerous to open the fuel line while the engine is running, as fuel openly pumped around a running engine would be extremely dangerous and present a fire hazard.

While the Examiner considers that Applicants are reading into the limitation “switch mechanism” more than what is there, it is submitted that the Examiner is reading the limitation too broadly. It is clear that the Examiner is considering the limitation “switch mechanism” to read on a mechanic who may cut or unbolt a magnetic device and remove it, and weld or bolt it onto the engine, such interpretation is not warranted by the specification. As stated in *In re Okuazwa*, 537 F.2d 545, 548, 190 USPQ 464,466 (CCPA 1976), “It is well established that ‘claims are not to be read in a vacuum, and limitations therein are to be interpreted in light of the specification in giving them their “broadest reasonable interpretation.”

Here, the Examiner has not considered Applicants' specification to interpret the claim limitation "switch mechanism." Rather, the limitation is apparently construed by the Examiner to cover anything that can be interchanged by a human using a welder and/or a wrench. As stated in *In re Bernhart*, 163 USPQ 611, 615 (CCPA 1969), "We know of no authority for holding that a human being, such as a draftsman, could ever be the equivalent of a machine disclosed in the patent application, and we are not prepared to so hold in this case."

It is noted that the Examiner bears the initial burden of presenting a *prima facie* case of unpatentability when comparing the claims with the prior art. If the burden is met by the Examiner, the Applicant must thereafter present evidence overcoming the *prima facie* case of unpatentability. See *in re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). In the instant case, the Examiner must provide more than unsupported assertions and mere speculations without any rational basis in order to establish an equivalent structure to the "switch mechanism" limitation.

Applicants have rebutted the assertion of obviousness by indicating possible and logical ways in which the Adam apparatus could have been used to obtain the before and after results, i.e. the use of a welder or wrenches. Indeed, the reference does not disclose, refer to or allude to any type of switch mechanism used, and thus the Examiner has resorted to inherency to reach the conclusion that there must be some "switch mechanism" in order to achieve a before and after result. Indeed, there is evidence in the Adam reference that no switch mechanism was employed, but rather the use of one engine without the magnetic apparatus, and another engine equipped with the magnetic apparatus.

Further evidence on behalf of the Applicants that a *prima facie* case of obviousness has not been established is that the limitation of claim 1 at issue is:

"A switch mechanism for switching said aftermarket apparatus into operation and out of operation *while said engine is running* to thereby affect said engine accordingly. (Italics added)

The Examiner indicates that the limitation concerning "while the engine is running" has no benefit and thus is a matter of design choice. To that end, it is stated in the Final Office Action (page 4):

In addition, it would have been an obvious matter of design choice to utilize the device while the engine is still running,

since the device would function in the same way without any benefit being gained whether the engine was or was not running during the switching operation.

The Examiner's conclusion is erroneous, in that a major benefit is provided to observers by using a switch mechanism on the demonstration engine to switch the aftermarket apparatus into operation and out of operation. The observers can instantly see the before and after results while the engine is running. The limitation of "while the engine is running" relates to the construction of the switch mechanism, in that it is of the type that allows switching of the aftermarket apparatus into and out of operation while the engine is running to achieve instant results.

It is highly unlikely that the Adam magnetic device was installed on an engine while it was running and then removed while running to determine the before and after effect. In order to maintain some degree of safety, one skilled in the art would shut off the engine when using a welder to install or remove the magnetic device from the fuel line. In addition, the engine would be shut off to use a wrench to bolt/unbolt the magnetic device from the fuel line, as if the engine were running the fuel pump would pump fuel out of the severed fuel line and present a danger of fire.

The foregoing clearly rebuts any evidence of obviousness based on the combination of the Pacheco reference in view of the Adam reference. It is submitted that a *prima facie* case of obviousness has not been established with respect to claim 1 of the captioned application.

Claim 1 is not obvious for the following additional reasons. Claim 1 includes the limitation that aftermarket apparatus is switched into operation and out of operation to affect the engine while it is running. While the Adam reference may disclose aftermarket apparatus in the nature of a magnetic fluid treatment device, it would not have been obvious to modify the Pacheco portable engine test stand to switchably mount aftermarket apparatus thereto in order to determine the affect thereof on the test engine.

The Pacheco portable engine test stand includes a frame with adjustable uprights to accommodate many different types of engines. The portable engine test stand also includes the apparatus necessary to allow an engine to operate; namely, a battery, gasoline tank, a water supply, a stock exhaust and muffler system, and a switch to start and stop the engine. In order

to monitor the engine performance, a few vital gauges are employed, including an oil pressure gauge, a tachometer and a temperature gauge. According to the teachings of the Pacheco reference, engines are tested to determine if there are any leaks, determine improper timing, and to carry out tuning operations such as valve adjustment, carburetor adjustments, ignition adjustments, timing adjustments, and the like. It is stated that engines can be operated in the test stand to “break in” the engine before placing it in a vehicle.

From the foregoing, the Pacheco test stand is for the purpose of repairing engines, and then running the engines to determine that the repairs were satisfactorily made. In order to determine whether the test engine had been repaired properly, it is desirable to maintain the number of variables at a minimum so that if the engine does not operate properly, the defect can be diagnosed and narrowed down more quickly. There would thus be no incentive or motivation to equip the Pacheco test engine with aftermarket apparatus and switch the same into and out of operation to determine whether the test engine is operation properly. Indeed, there is no suggestion of such an operation disclosed in the Pacheco reference. Rather, as noted above, the Pacheco portable engine test stand is equipped with the vital equipment that is only necessary to operate the engine. Moreover, it is submitted that the apparatus that is part of the engine test stand, other than the engine itself, remains with the test stand to be used over and over again with different engines. There is no need, nor no suggestion in the Pacheco reference, of using apparatus that can be switched into operation and out of operation to determine the effect on the engine of aftermarket apparatus. To do this on an engine that is in the stages of testing, one would not know if the different results were due to the switching of the aftermarket apparatus, or due to the engine itself, since the purpose of the test stand is to assure that the engine is operating properly when out of the vehicle.

As noted in the specification of the captioned application, the engine is the mechanism for testing the aftermarket apparatus to determine the affect on the engine when the aftermarket is switch into operation, and when switched out of operation. The demonstration engine itself is not being tested. Rather, the demonstration engine is assumed to be operating properly, and the focus is on the difference the aftermarket apparatus makes on the performance of the engine. In this instance, the variable is the aftermarket apparatus, and the engine is not the variable. By demonstrating the difference the aftermarket apparatus makes on the performance of the engine, observers can be convinced that the aftermarket apparatus is of a benefit, thus selling more of the aftermarket apparatus. As noted in the captioned application, the use of the engine performance demonstration unit at auto race tracks, county fairs, and the like, allows

observers to instantly see the actual difference in engine operation as a result of the use of the aftermarket apparatus.

From the foregoing, the motivation of one skilled in the art would be to minimize the variables to which the test engine is subjected in order to confirm that the engine is repaired properly, without having to assess the additional variable of other apparatus imposing different operating conditions on the engine. For this additional reason, a *prima facie* case of obviousness has not been established.

Claims 6, 13, 14, 26 and 27 are believed to be patentable for the same reasons set forth above in connection with claim 1.

Claims 2, 4 and 5

Claim 2 depends from claim 1 and specifies “a visual display for visually showing the difference in operation of the aftermarket apparatus when operational and nonoperational.”

Claim 2 has been rejected as being made obvious by the Pacheco reference in view of the Adam reference. The Examiner has not pointed out any claimed visual display for showing the before and after operation of the aftermarket apparatus. As noted above, the Pacheco reference discloses a portable engine test stand for testing the engine, not for testing the affect of aftermarket apparatus thereon. The engine gauges disclosed in the Pacheco reference are for the specific purpose of showing the vital operational parameters of the engine to keep it from being damaged during testing, such as oil pressure, engine rpm, and temperature. There would be no need, and there is no suggestion in the reference, to include other visual displays to also test the difference that aftermarket apparatus makes on the test engine.

As such, claim 2 is patentable in its own right over the cited references. Claims 4 and 5 are patentable for the same reasons set forth above in connection with claim 2.

Claim 3

Claim 3 depends from claim 2 and specifies that “said visual display comprised two

visual displays, one visual display showing an engine performance parameter when the aftermarket apparatus is not operational, and a second visual display showing the engine performance parameter when the aftermarket apparatus is operational.”

While the Examiner has indicated that the use of specific visual displays are not disclosed in the Pacheco reference, there is no evidence of record where the prior art makes the limitations of claim 3 obvious. The mere assertion of obviousness by the Examiner is insufficient to establish a *prima facie* case of obviousness. In Applicants’ response (page12) to the first non-final Office Action dated March 31, 2005, the Applicants requested of the Examiner the following:

Lastly, the mere existence in the prior art of flow rate indications (claim 3), pollutant parameters (claim 4), catalytic converters (claim 13) and dynamometers (claim 14) does not make obvious the use of the same with the claimed engine performance demonstration unit. The examiner is respectfully requested to cite prior art providing evidence of the obviousness of the same with claim 1 of the captioned application.

The Examiner failed to cite any prior art and make the same of record and available to Applicants so that the same can be assessed and challenged, if necessary, to rebut the charge of obviousness. Rather, the Examiner has decided to rest the case of obviousness on mere assertions without evidentiary support. Accordingly, the Examiner has not met the initial burden of establishing a case of obviousness. Claim 3 thus remains patentable over the prior art of record.

Claim 7

Claim 7 depends from claim 1 and specifies ” wherein said switch mechanism comprises a valve for switching fuel.”

In the Final Office Action, there is no evidence of record indicating where there is disclosed a valve used on a demonstration engine for switching into operation and out of operation the aftermarket apparatus. Nevertheless, the rejection of claim 7 is maintained. Absent a disclosure in the prior art of a valve for switching aftermarket apparatus in the manner

claimed, there can be no *prima facie* case of obviousness. There must be a factual basis to support a conclusion of obviousness. *In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), *cert. denied*, 389 U.S. 1057 (1968). Lacking evidence of obviousness, a rejection of obviousness cannot be sustained.

Claim 10

Claim 10 depends from claim 1 and specifies “said mechanism comprises a carrier for holding said aftermarket apparatus in a position spaced apart from a fuel line and thus does not influence the fuel in said fuel line, and wherein said carrier is movable to a position wherein said aftermarket apparatus is adjacent said fuel line.”

The rejection of claim 10 is based on the conclusion that “simply moving the magnets into and out of contact with the fuel line is considered to be within the purview of one of ordinary skill in the art, in order to determine the effect of the magnets on the combustion characteristics.” (Final Office Action, page 4).

This position taken by the Examiner is apparent in view of Applicants’ application, but not in view of the cited prior art. The rejection of obviousness is again based on the Examiner’s subjective reasoning, without any evidentiary support. The Examiner has proffered no prior art whatsoever to support the rejection of obviousness. The Examiner cannot reject a claim based some conclusory basis and leave it to the Applicants to guess where in the cited prior art the evidence is to support the rejection. Accordingly, claim 10 is not made obvious by any evidence of record.

Claim 11

Claim 11 depends from claim 10 and specifies “wherein said aftermarket apparatus comprises a three-part magnet, each said magnet held in a respective metal frame.” Claim 11 essentially pertains to the three-part magnet that is held in the carrier of claim 10. Again, the Examiner has pointed to no prior art that would suggest such a combination. Accordingly, a *prima facie* case of obviousness has not been established.

Claim 15

Claim 15 depends from claim 1 and specifies “wherein said mobile carrier comprises a wheeled trailer to which said engine is mounted for mobile movement, said wheeled trailer adapted for being pulled by a vehicle over a highway .”

The rejection of claim 15 is maintained, but it is not clear from the Final Office Action just where the prior art suggests modifying the Pacheco portable engine test stand to adapt the same for being pulled by a vehicle over a highway. It is stated in the Final Office Action that (page 4, with respect to claim 26) “the recitation of adapting the mobile carrier for towing is not deemed to be in inventive step, or in other words, it would have been obvious to one of ordinary skill in the art, since providing mechanical modification to render the mobile carrier suitable for towing is considered to be within the purview of one of ordinary skill in the art.”

At page 5 of the Final Office Action, in the “Response to Arguments” section, the Examiner states ”Applicant also argues that the position taken by the examiner, namely that providing mechanical modification to render the mobile carrier of Pacheco suitable for towing is considered to be within the purview of one of ordinary skill in the art is not a valid position is unconvincing. Pacheco has wheels 102, 104, not castors. There is no mention of castors in Pacheco. The towing technology is old and well known, and there is no reason why one skilled in the art could not employ the conventional technology of towing to modify the mobile device of Pacheco to render it suitable for towing.

The conclusion that the Pacheco portable engine test stand could be modified so as to make it towable on a highway is not the issue. The issue for establishing obviousness is whether there is a motivation by one skilled in the art when considering the Pacheco reference and the Adam reference, to modify the Pacheco test stand to make it towable on a highway. The Pacheco reference does not aim to solve any problem of moving the test engine from one geographical address to another, so as to necessitate towing over a highway. The reason why the Pacheco test stand has casters is to move the test engine from one place in the repair shop to another place, which small wheel casters do just fine. To that end, it is stated in the Pacheco reference (column 1, lines 27-36; column 2, lines 25-28 and column 4, lines 41-43):

The stand of the present invention is relatively light in weight and small enough to fit in the corner of a home garage or

a small automobile repair facility. The stand of the present invention while supporting an engine can be rolled to any part of the repair facilities. Thus, an engine on the portable engine test stand of the present invention is not restricted to being tested at a fixed station, but can be tested anywhere in the repair facilities.

...

In addition, the portable engine test stand of the present invention has a pair of fixed front wheels and a pair of swiveling back wheels. The swiveling back wheels facilitate steering the stand when it is rolled.

...

Furthermore, FIGS. 1 and 3 show a plurality of wheels, such as casters, supporting the base 20 of the portable engine stand 10.

The conclusion that the Pacheco portable engine test stand could be modified to make it towable over the highway is believed to be without merit. The frame of the engine test stand is constructed, as illustrated in the drawings, for supporting the engine and associated vital apparatus, such as a gas tank and a battery. The frame is not adapted for pulling the engine on the highway at highway speeds, as that would be dangerous. The four wheels, two of which swivel, employed by the Pacheco portable engine test stand is not a design adapted for pulling on a highway, especially with such a short wheel base of the test stand. This would represent a very unstable stand when pulled behind a vehicle at highway speeds. A stand with four wheels, two of which swivel, is adapted for pushing, such as a grocery cart in a supermarket. Such an arrangement is well adapted for steering when being pushed from behind. While it is stated in the Pacheco reference that the stand can be pulled, this is an unstable arrangement as noted above, and pushing the stand on a highway would be illogical. If the engine needed to be taken to another repair shop, then the engine would be removed from the test stand and placed in a truck or on a trailer and towed to the other repair facility, as is a conventional practice.

It is noted that the wheels described in the Pacheco reference are casters, as shown in the Figures 1 and 3. Casters are not adapted for use on a highway at highway speeds, and nothing in the reference suggests using trailer or vehicle tires, as this would make the portable test stand cumbersome to wheel around in a repair shop. The use of trailer tires adapted for

highway use would make the engine either too high off the ground to work on it efficiently, or would be in the way of a repairman trying to repair the engine mounted to the test stand. To that end, the small casters are mounted under the base of the test stand and are small in diameter, thus rendering the same well suited for the described use of the test stand in a repair shop.

From the foregoing, there is no motivation for adapting the Pacheco portable test stand for towing on a highway. There is also no suggestion for modifying the Pacheco portable engine test stand in the manner suggested by the Examiner. Accordingly, claim 15 has not been shown by the Examiner to be obvious over the cited prior art.

Claim 21

Claim 21 depends from claim 1 and specifies “a programmed processor for controlling said switch mechanism for switching said aftermarket apparatus into and out of operation.”

In the Final Office Action, it is admitted that the Pacheco reference does not disclose the use of a programmed processor to control the switch mechanism. Nevertheless, the basis of the rejection of claim 21 is that “In addition, it would have been obvious to provide a programmed processor to perform the functions of the unit, such as switching the device in and out of operation, ...” (See Final Office Action, page 3)

The structure of claim 21 is not made obvious on the basis that it is the Examiner’s feeling that the prior art makes it obvious, without a showing where the prior art establishes obviousness. It is submitted that the rejection of claim 21 cannot be sustained without evidence of record to support a *prima facie* case of obviousness.

Claim 22

Claim 22 depends from claim 1 and specifies “a programmed processor for monitoring engine performance parameters before said aftermarket apparatus has been switched into operation and after said aftermarket apparatus has been switched into operation, and providing a visual display of said parameters.”

For the same reasons set forth above in connection with claim 21, claim 22 is also not

made obvious over the cited prior art. In addition, there is no showing by the Examiner where in the cited prior art there is a processor that is employed to monitor the before and after engine performance and provide a visual display of the same. Absent a teaching or suggestion of this claim limitation, such claim is patentable over the cited prior art.

Claim 23

Claim 23 depends from claim 22 and specifies “wherein said programmed processor stores the engine performance parameters and provides a visual display of the stored parameters.”

The Examiner has not produced any evidence from the cited prior art showing or suggesting this claim limitation. Thus, a *prima facie* case of obviousness has not been established.

Claim 24

Claim 24 depends from claim 23 and specifies “wherein said programmed processor is programmed to simultaneously display an engine performance parameter resulting from the aftermarket apparatus switched in and out of operation.”

The Examiner has not produced any evidence from the cited prior art showing or suggesting this claim limitation. Thus, a *prima facie* case of obviousness has not been established.

Claim 25

Claim 25 depends from claim 24 and specifies “wherein said programmed processor is programmed to calculate and display a difference between said engine performance parameters.”

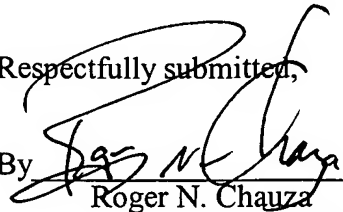
The Examiner has not produced any evidence from the cited prior art showing or suggesting this claim limitation. Thus, a *prima facie* case of obviousness has not been established.

CONCLUSION

A *prima facie* case of obviousness has not been established with regard to claims 1-6, 10, 11, 13-15, and 21 - 27, in that the teachings of the cited prior art do not disclose or suggest the invention as a whole. In view of the foregoing, the Board of Patent Appeals and Interferences is respectfully requested to reverse the Examiner's rejections as to all of the appealed claims.

Respectfully submitted,

By


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CLAIMS APPENDIX

1. An engine performance demonstration unit, comprising:
a mobile carrier;
an engine mounted to said mobile carrier;
aftermarket apparatus for use with said engine to affect the operation of said engine;
and
a switch mechanism for switching said aftermarket apparatus into operation and out of operation while said engine is running to thereby affect said engine accordingly.
2. The engine performance demonstration unit of claim 1, further including a visual display for visually showing the difference in operation of the aftermarket apparatus when operational and nonoperational.
3. The engine performance demonstration unit of claim 2, wherein said visual display comprised two visual displays, one visual display showing an engine performance parameter when the aftermarket apparatus is not operational, and a second visual display showing the engine performance parameter when the aftermarket apparatus is operational.
4. The engine performance demonstration unit of claim 2, wherein said visual display displays a flow rate of fuel to said engine.
5. The engine performance demonstration unit of claim 2, wherein said visual display displays a parameter related to a pollutant emitted by said engine.
6. The engine performance demonstration unit of claim 1, wherein said aftermarket apparatus comprises a magnet that influences the molecules of fuel.

7. The engine performance demonstration unit of claim 1, wherein said switch mechanism comprises a valve for switching fuel.

8. The engine performance demonstration unit of claim 1, wherein said switch mechanism comprises an articulated mechanism for holding a plurality of magnet assemblies, said articulated mechanism is hinged for operation for moving said magnet assemblies into and out of magnetic influence with a fuel line.

9. The engine performance demonstration unit of claim 8, wherein said articulated mechanism includes a plurality of segments, each segment for attachment thereto of a respective magnet assembly, and each segment hinged to an adjacent segment by a hinge.

10. The engine performance demonstration unit of claim 1, wherein said mechanism comprises a carrier for holding said aftermarket apparatus in a position spaced apart from a fuel line and thus does not influence the fuel in said fuel line, and wherein said carrier is movable to a position wherein said aftermarket apparatus is adjacent said fuel line.

11. The engine performance demonstration unit of claim 10, wherein said aftermarket apparatus comprises a three-part magnet, each said magnet held in a respective metal frame.

12. The engine performance demonstration unit of claim 1, further including a branched fuel line comprising a valve for switching fuel to either of two branches, one branch having said aftermarket apparatus coupled therein, and the other branch coupling fuel directly from said valve to said engine.

13. The engine performance demonstration unit of claim 1, further including a catalytic converter switched into and out of operation with respect to exhaust gasses of the engine.

14. The engine performance demonstration unit of claim 1, further including a load that is switchable into and out of operation with respect to said engine, said load providing a resistance to a torque produced by said engine.

15. The engine performance demonstration unit of claim 1, wherein said mobile carrier comprises a wheeled trailer to which said engine is mounted for mobile movement, said wheeled trailer adapted for being pulled by a vehicle over a highway.

16 - 20 (canceled)

21. The engine performance demonstration unit of claim 1, further including a programmed processor for controlling said switch mechanism for switching said aftermarket apparatus into and out of operation.

22. The engine performance demonstration unit of claim 1, further including a programmed processor for monitoring engine performance parameters before said aftermarket apparatus has been switched into operation and after said aftermarket apparatus has been switched into operation, and providing a visual display of said parameters.

23. The engine performance demonstration unit of claim 22, wherein said programmed processor stores the engine performance parameters and provides a visual display of the stored parameters.

24. The engine performance demonstration unit of claim 23, wherein said programmed processor is programmed to simultaneously display an engine performance parameter resulting from the aftermarket apparatus switched in and out of operation.

25. The engine performance demonstration unit of claim 24, wherein said programmed processor is programmed to calculate and display a difference between said engine performance parameters.

26. A method of demonstrating the affect of aftermarket apparatus on the performance of an engine, comprising the steps of:

- providing a mobile carrier adapted for towing with a vehicle on a highway;
- providing the mobile carrier for carrying said engine;
- providing aftermarket apparatus mounted to the engine; and
- providing a switch mechanism for switching the aftermarket apparatus into and out of operation while the engine is operating to thereby provide an indication of the affect thereof on the engine performance.

27. A method of demonstrating the affect of magnets on the performance of an engine, comprising the steps of:

- providing a mobile carrier;
- providing the mobile carrier for carrying said engine;
- providing one or more magnets to influence molecules of fuel fed to said engine;
- providing a switch mechanism for switching the one or more magnets into and out of operation while the engine is operating to thereby provide an indication of the affect thereof of the one or more magnets on the engine performance; and
- providing a visual indication during engine operation of the affect of the one or more magnets on the engine performance.

EVIDENCE APPENDIX

A. U.S. Pat. No. 4,932,628 by Pacheco

B. U.S. Pat. No. 5,637,226 by Adam et al.

RELATED PROCEEDING APPENDIX

(None)